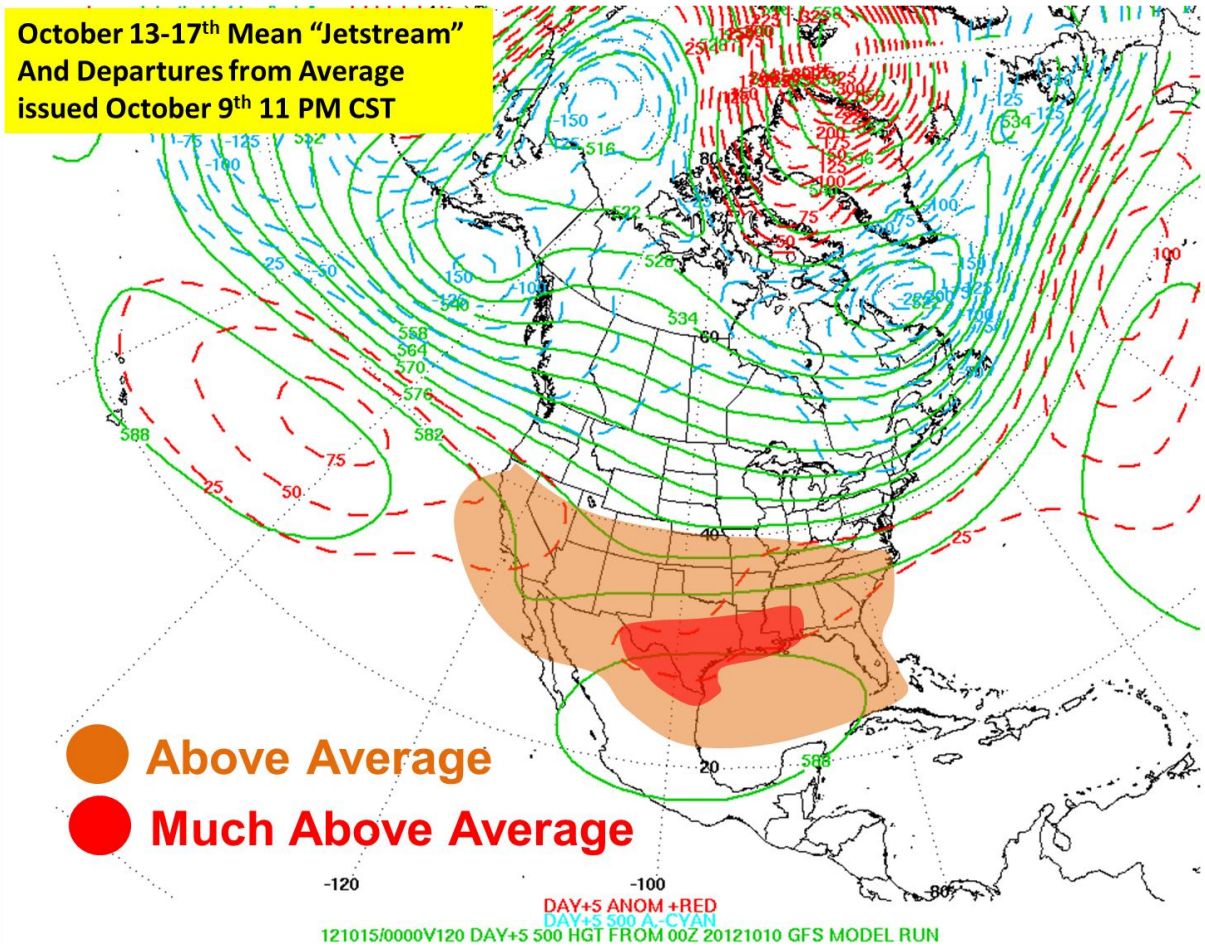


Figure 1: *Mean forecast 500 mb (~15-20 thousand foot) flow for mid October, with expected temperature departures from average overlaid. Source: U.S. Global Forecast System model.*

"Hot-Tober" 2012?

After Brief Cooldown, the Heat Returns. Will it Hold?

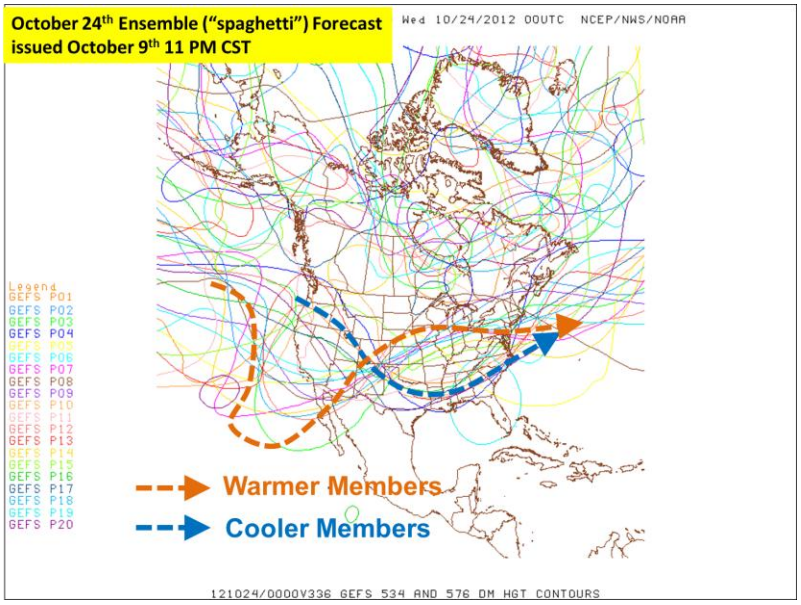
Overview

Following another fairly dry, and hot, September, the first week of October saw no appreciable change as August-like heat and minimal rainfall prevailed through the 6th. The first significant front of the young autumn brought a sharp temperature change by Sunday the 7th; readings were 30 degrees cooler from the Rio Grande Plains to the Jim Hogg County brush country between 4 PM Saturday (lower 90s) and 4 PM Sunday (lower 60s), and 20 to 25 degrees cooler elsewhere (lower 90s at 4 PM Saturday to upper 60s and lower 70s at 4 PM Sunday). A steely gray day on October 8th held temperatures below 80 degrees in all of South Texas for the first time since March 11th – nearly 7 months. The cool down was erased by the return of upper 80s to mid 90s temperatures by the 9th. Summer returned. Through mid month (above), strong high pressure well above the earth's surface combined with a resurgence of flow from the south will ensure late August/early September type heat and humidity, and push month-to-date average temperatures at least 3 degrees above the 30 year averages (1981-2010) by the 17th. Winds will gust from the south or southeast each day.

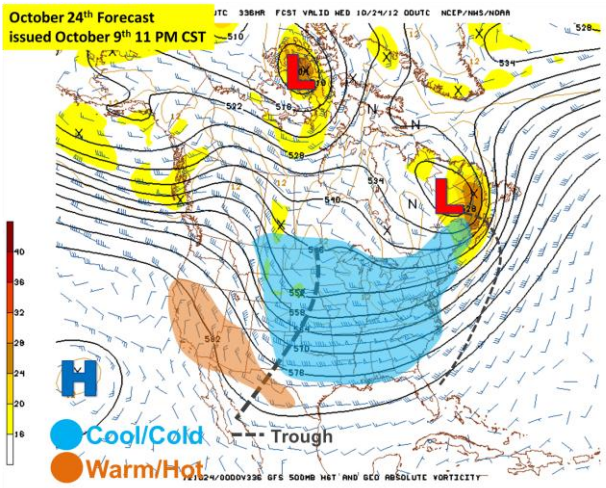
What's Next?

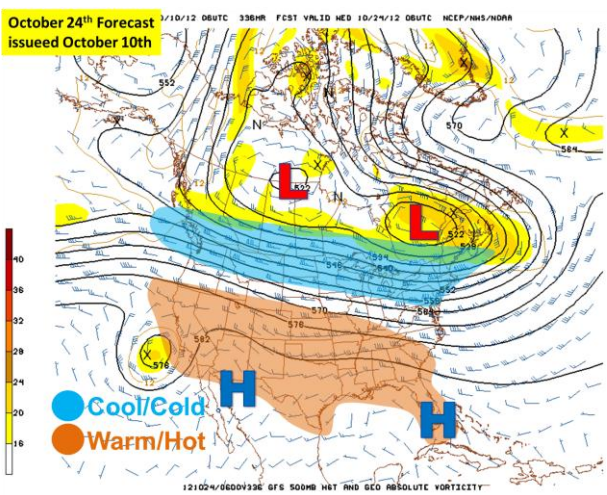
From the 17th through the 19th, more of the same is likely as the high pressure ridge weakens a bit. How much the ridge weakens will determine whether a cooling front can reach the Rio Grande Valley. If not, temperatures will continue to soar, reaching at least 4 degrees above long term averages by the 20th. Thereafter, forecast confidence decreases. The U.S. Global Forecast System (GFS) model, which runs out to sixteen days and, as of October 10th, extended through the 26th, indicated two potential trends (top right of next page). These trends were shown in successive model runs, completed at around 11 PM CST on the 9th (left, next page) and around 5 AM CST on the 10th (right, next page). Clearly shown from the earlier run is a trend

for somewhat cooler weather across much of the eastern two-thirds of the U.S., including Texas; Rio Grande Valley temperatures would shade to near or a little below average after the 20th and continue for at least several days. Clearly shown from the later run is a continued warm to hot pattern for south Texas which would ensure a much above normal – "Hot-Tober" – 2012.



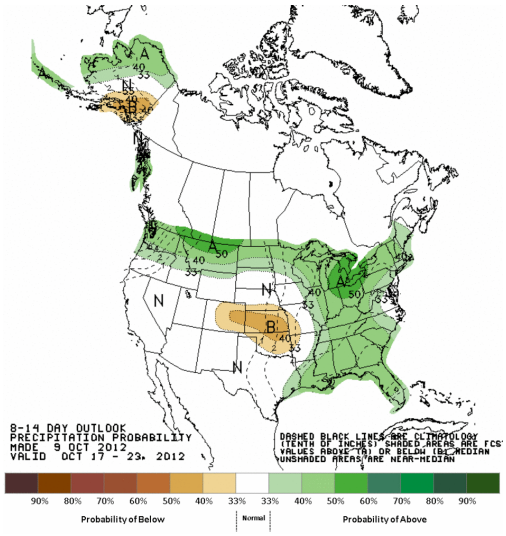
The "gut" feeling here, given the persistence of the negative phase of the North Atlantic Oscillation and the atmospheric ridge of high pressure across the Southwest U.S., often extending into north central Mexico and eastward through south Texas and the western Gulf, is this pattern will remain dominant for the balance of the month. One or two minor cool downs after the 20th are possible, but will be fleeting and have only a slight bearing on the final monthly temperature average, which will be above to well above the 30 year mean.





What about Rainfall?

Atmospheric ridges are all about fair weather across the Rio Grande Valley. Couple the ridge with October's rapid decline in average daily precipitation, and a persistent pattern shown above (right) would ensure another dry to very dry month with a few exceptions along the coast, where 2 to 4 inches of rain fell in heavy rain bands on the 8th. Should the final solution 'lean' toward the jet stream dip (above left), some rain will fall – but location and intensity will be highly dependent on local effects, position and movement of fronts, converging moisture fields, etc. Tropical waves/cyclones from the Atlantic are finished for 2012; remains from any Pacific storms should remain well west of Texas. The 8-14 day precipitation forecast (left) indicates "equal chances" – meaning a 33.3 percent chance for below, average, or above average precipitation.



Beyond October

Our winter forecast for the Rio Grande Valley (December-February) will be posted in early November. Uncertainty and low confidence are keywords now. El Niño, which appeared to be a "lock" just a month or so ago, now looks uncertain. Eastern tropical Pacific waters have cooled and the phase of the El Niño/Southern Oscillation is teetering between weak El Niño and Neutral. The latest forecast from the Climate Forecast System

model (below left) suggests continued “teetering” through early winter, followed by a return to neutral conditions by late winter and spring of 2013. The latest probabilities (below right) now indicate a plurality that ENSO-neutral conditions will return. What might this mean for the Valley’s weather? Until the “puzzle pieces”, such as the North Atlantic Oscillation but also other weekly to monthly signals, show themselves, the long range crystal ball remains cloudy as of this writing.